

JP 11-302,133

JP 11-302133

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Code: 5000-77211

JAPANESE PATENT OFFICE  
PATENT JOURNAL (A)  
KOKAI PATENT APPLICATION NO. HEI 11[1999]-302133

Int. Cl. <sup>6</sup> :	A 61 K 7/06 31/38 31/41 35/78 38/46 37/54
Filing No.:	Sho 10[1998]-131064
Filing Date:	April 24, 1998
Publication Date:	November 2, 1999
No. of Claims:	2 (Total of 9 pages; FD)
Examination Request:	Not filed

HAIR AND SCALP COSMETIC PREPARATION

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[There are no amendments to this patent.]

### Abstract

#### Problem

The purpose of this invention is to provide a type of hair and scalp cosmetic preparation having excellent hair growth promoting effect, hair loss-inhibiting effect, anti-itching and antidandruff effect, as well as high safety.

#### Means to solve

The aforementioned problem can be solved by means of a type of hair and scalp cosmetic preparation which contains an anti-inflammatory agent (one or several anti-inflammatory agents selected from the group of allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride), and cuachalalate extract.

### Claims

1. A type of hair and scalp cosmetic preparation containing anti-inflammatory agent and Cuachalalate extract.
2. The hair and scalp cosmetic preparation described in Claim 1, characterized by the fact that the anti-inflammatory agent is one or several anti-inflammatory agents selected from the group of allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride.

### Detailed explanation of the invention

[0001]

#### Technical field of the invention

This invention pertains to a type of hair and scalp cosmetic preparation (referred to as hair cosmetic preparation hereinafter). More specifically, this invention provides a type of hair cosmetic preparation having excellent hair growth promoting effect, hair loss-inhibiting effect, anti-itching and antidandruff effect, as well as high safety. The hair cosmetic preparation of this invention is used in particular in the field of medicine, nonprescriptive medicine, and cosmetics.

[0002]

Prior art

There are various types of hair cosmetic preparations, and there are products corresponding to various hair and scalp states. For example, products that can improve the hair loss state by preventing dandruff and itching of the scalp have been developed. Various problems of the scalp are on the rise as social stress increases now in older society. Consequently, there is a rapidly rising demand for hair cosmetic preparations to treat scalp problems. Usually, causes of baldness and hair loss include activation of the male hormone in the sebaceous gland of the upper portion of the hair follicle and other organs, insufficient supply of nutrients due to decrease in the blood flow to the hair papilla and hair follicles, excessive onset of dandruff due to abnormality of cornification of the epithelial tissue, excessive sebum secretion, formation of lipid peroxide, stress, etc. In order to grow robust and pretty hair, it is important to ensure a sufficient supply of nutrition to the hair papilla and hair follicle. If the blood flow to the hair papilla and hair follicles decreases, malnutrition and degradation in expelling waste take place, leading to fine hair and thin hair.

[0003]

From the aforementioned viewpoint, solving the problems of excessive sebum secretion on the scalp is necessary to overcome hair and scalp problems. Conventional hair cosmetic preparations contain substances that can eliminate or alleviate the elements believed to be the cause of baldness and hair loss. For example, in order to improve blood circulation in the scalp, hair cosmetic preparations may contain swertia extract, vitamin E and its derivatives, acetyl choline derivatives, cepharanthine and other blood flow promoting agents, as well as capsicum tincture and other local stimulants. In order to inhibit inflammation of the scalp due to excessive sebum secretion or the like, extract of the root of *Arnebia euchroma* (Royle) Johnston or other anti-inflammatory agent may be added. In order to suppress the male hormone, estradiol or other female hormone agent may be added. In order to supplement nutrition to the hair follicles, etc., serine, methionine, or other amino acids, vitamins, etc., may be added. By adding these components, it is possible to prevent baldness, hair loss, thinning of hair, etc.

[0004]

Problems to be solved by the invention

However, when these components are added in small amounts to the hair cosmetic preparation, it is hard to realize a sufficient effect. On the other hand, if they are added in large amounts, there is a significant tendency of an unpleasant irritated feeling and reddening of the

portion to which they were applied and its periphery. Consequently, there is a limit on the amounts that can be added.

[0005]

The purpose of this invention is to solve the aforementioned problems of the conventional technology by providing a type of hair cosmetic preparation with excellent effects as well as high safety.

[0006]

Means to solve the problems

In order to solve the aforementioned problems, the inventors of this patent application performed extensive studies. As a result of the studies, it was found that when the anti-inflammatory agents conventionally added to hair cosmetic preparations are combined with cuachalalate extract, it is possible to obtain a hair cosmetic preparation with excellent hair growth promoting effect, hair loss-inhibiting effect, anti-itching and antidandruff effect, as well as high safety. In this way, this invention was reached.

[0007]

That is, this invention provides a type of hair cosmetic preparation containing an anti-inflammatory agent and cuachalalate extract.

[0008]

If the, "Anti-inflammatory agent" is one or two or more anti-inflammatory agents selected from the group of allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride, the stated effect can be displayed more effectively.

[0009]

Embodiment of the invention

In the following, an embodiment of this invention will be explained. The hair cosmetic preparation of this invention is prepared from a combination of anti-inflammatory agent and cuachalalate extract, and it can display the stated effect.

[0010]

When the anti-inflammatory agent that can be added to the hair cosmetic preparation of this invention is coated on skin, it is possible to suppress inflammation of the coated portion. There is no special limit on the type of components added to the agent for external use, as long as there is no safety problem. Also, there should be no problem with respect to the functioning of the components.

[0011]

More specifically, it is possible to select from the following compounds conventionally used as anti-inflammatory agents in hair cosmetic preparations: allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, diphenhydramine hydrochloride, berberine chloride, zinc chloride, methyl salicylate, glycyrrhizic acid or its derivatives, extract of the root of *Arnebia euchroma* (Royle) Johnst, etc. Among these anti-inflammatory agents, in particular, it is preferred that allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride are selected for addition to the hair cosmetic preparation of this invention.

[0012]

Allantoin has the chemical name of 5-ureidohydantoin, and it was first found in bovine amnion. It has been found to have anti-inflammatory activity and astringent activity. Its manufacturing method is well known and it is commercially available. Also, according to this invention, "allantoin" also includes the following allantoin derivatives: allantoin acetyl-DL-methionine, allantoin- $\beta$ -glycyrrhizic acid, allantoin chlorohydroxyaluminum, allantoin dihydroxyaluminum, allantoin-DL-pantothenyl alcohol, allantoin polygalacturonic acid, etc. These allantoin derivatives are well known, and they are also commercially available.

[0013]

Ichthammol is commonly known as ichthyol, and it has been found to have anti-inflammatory activity and a preservative effect. Its manufacturing method is well known and it is commercially available.

[0014]

Guaiazulene has the chemical name of 1,4-dimethyl-7-isopropylazulene. It is manufactured by dehydrogenating guaiol, and it has been found to have anti-inflammatory activity and anti-allergic activity. Its manufacturing method is well known and it is commercially available. According to this invention, "guaiazulene" also includes sodium guaiazulene sulfonate

and other guaizulene derivatives having anti-inflammatory activity. These guaizulene derivatives have well-known manufacturing methods, and they are commercially available.

[0015]

$\epsilon$ -aminocaproic acid has the chemical name of 6-aminohexanoic acid. It has a structure in which the amino group at the  $\alpha$ -site is removed from L-lysine. It is known as a medicine having strong plasmin suppressing effect. Its manufacturing method is well known, such as the method of hydrolysis of caprolactam, and it is also commercially available.

[0016]

Lysozyme hydrochloride has the chemical name of N-acetylmuramide glycanohydrolase. It is a basic polypeptide prepared from eggwhite, that is, it is an enzyme having a mucopolysaccharide decomposing effect, and it has been found to have anti-inflammatory activity. Its manufacturing method is well known and it is commercially available.

[0017]

Diphenhydramine hydrochloride is known as an antihistamine medicine. Its manufacturing method is well known and it is commercially available.

[0018]

Each of the aforementioned anti-inflammatory agents may be used alone or in combination with cuachalalate extract to be explained later for addition to the hair cosmetic preparation of this invention. However, it is also possible to add two or more of them.

[0019]

For the hair cosmetic preparation of this invention, the amount of the aforementioned anti-inflammatory agents with respect to the total hair cosmetic preparation should be in the range of 0.001-5.0 wt%, or preferably in the range of 0.01-2.0 wt%. If the amount of the anti-inflammatory agents added with respect to the total amount of the hair cosmetic preparation is less than 0.001 wt%, sufficient anti-inflammatory activity cannot be displayed. On the other hand, if the amount is over 5.0 wt%, the formulation becomes inappropriate, and skin irritation takes place, with possible safety problems. This is undesired.

[0020]

Cuachalalate extract added together with the aforementioned anti-inflammatory agent in the hair cosmetic preparation of this invention is an extract of cuachalalate (*Juliania adstrinens*),

a species of plant growing in the Acapulco region, in the southern Pacific coastal region of Mexico. It has been found that cuachalalate extract is effective in treating wounds and urtication, in strengthening the gums, and in treating cancers of the digestive organs and hair loss (Japanese Kokai Patent Application No. Hei 4[1992]-181313). Also, it has been found to have a protease inhibiting effect. Cuachalalate extract can be prepared by dipping the leaves, stems, flowers, skins, seeds, fruits, whole herbs, etc., of cuachalalate in a solvent, or by heating together with the solvent with reflux, followed by filtering and concentration. The concentrate prepared in this way may be processed by a solvent for rectification, chromatography or the like before use in preparing the hair cosmetic preparation of this invention. Any solvent conventionally used for extracting plant oils can be used in this case, such as methanol, ethanol, and other alcohols, water-containing alcohols, acetone, ethyl acetate, and other organic solvents, which may be used either alone or as a mixture of several.

[0021]

The amount of cuachalalate extract in the hair cosmetic preparation of this invention should be in the range of 0.0001-20.0 wt%, or preferably in the range of 0.05-5.0 wt%.

[0022]

If the amount of cuachalalate extract with respect to the total amount of the hair cosmetic preparation is less than 0.0001 wt%, sufficient anti-inflammatory activity cannot be realized, and this is undesired. On the other hand, if the amount is over 20.0 wt%, the formulation becomes inappropriate, and skin irritation takes place. This is undesired.

[0023]

In this way, by a combination of the aforementioned anti-inflammatory agent and the aforementioned cuachalalate extract, it is possible to form the hair cosmetic preparation of this invention with excellent hair growth promoting effect, hair loss-inhibiting effect, anti-itching and antidandruff effect, as well as high safety.

[0024]

The hair cosmetic preparation of this invention may also contain various medically effective components commonly added to conventional hair cosmetic preparations so as to display the general effects of the medically effective components, as long as the desired effects of this invention are not degraded.



[0025]

Examples of medically effective components that can be added to the hair cosmetic preparation of this invention include swertia extract, vitamin E and its derivatives, nicotinic benzyl ester, cepharanthine, carpronium chloride, minoxidil and other blood flow promoting agents; capsicum tincture, cantharis extract, camphor, vanilamide nonyate and other local stimulants; pyridoxine or its derivatives, sulfur, vitamin B<sub>6</sub>, and other antiseborrhea agents; benzalkonium chloride, isopropylmethylphenol, resorcinol, zinc pyrithione, Photosensitive Element #101, Photosensitive Element #102, salicylic acid, sodium salicylate, ortho-pyrox, hinokitiol, and other anti-inflammatory agents; Photosensitive Element #301, placenta extract, biotin, and other metabolism-activating agents; estradiol, estrone, and other female hormone agents; serine, methionine, tryptophan, and other amino acids; vitamin A, B<sub>2</sub>, B<sub>12</sub>, D, pantothenic acid or its derivatives, and other vitamins, etc.

[0026]

Also, the hair cosmetic preparation of this invention may contain the plant extracts conventionally added to hair cosmetic preparations, such as althea extract, yokuinin extract, peppermint extract, yotei [transliteration] extract, pepper extract, aloe extract, lycium extract, artemisia extract, rice extract, manjingzi extract, rosemary extract, kossaiho [transliteration] extract, scoparius extract, gentiana extract, root *salviae militorrhiza* extract, sponge gourd extract, balloon flower extract, pine extract, sophora root extract, angelica root extract, safflower extract, berberidaceae extract, betel nut palm extract, eucalyptus extract, *Prunellae spica* extract, *Akebia caulis mutong* extract, achyranthes extract, bupleuri root extract, tea extract, glycyrrhiza extract, hops extract, chrysanthemum extract, senega extract, sesame extract, cnidum extract, cashew extract, puerariu extract, rose extract, saffron extract, rosemary extract, rehmannia root extract, mallow extract, etc.

[0027]

As long as the effects of this invention are not degraded, it is also possible to add the following compounds to the hair cosmetic preparation of this invention: lactic acid or its alkyl ester, etc.; succinic acid, malic acid, citric acid, and other organic acids; tranexamic acid and other protease inhibiting agents; olive oil, squalane, liquid paraffin, isopropyl myristate, higher fatty acids, higher alcohols, and other oil components; glycerin, propylene glycol, and other polyhydric alcohols; as well as surfactants, moisture retaining agents, thickeners, oxidation inhibitors, UV absorbers, cooling agents, perfumes, dyes, ethanol, water, etc.

[0028]

The hair cosmetic preparation of this invention may be of various forms, such as liquid, lotion, ointment, cream, gel, aerosol, etc., as long as it can be applied to the skin. As needed, an appropriate base agent component may be added to prepare the hair cosmetic preparation of this invention in the desired product form. Also, the hair cosmetic preparation of this invention can be applied in various fields as drugs, nonprescription drugs, makeup, etc.

[0029]

The hair cosmetic preparation of this invention can be used in treating and preventing hair loss, itching, dandruff, etc. For example, it can be used in treating and preventing male alopecia and female diffuse alopecia, and in treating circular alopecia, etc. Of course, these are just some examples of the applications. Use of the hair cosmetic preparation of this invention is not limited to these diseases.

[0030]

The hair cosmetic preparation of this invention is administered topically. For example, it may be directly coated or sprayed on the skin. (Also, for the hair cosmetic preparation of this invention, due to the aforementioned combination of various components, the endermatic absorption of the components is promoted.) The dose of the hair cosmetic preparation of this invention administered depends on the age, degree of hair loss, and other specific individual conditions, as well as the form of the formulation. Usually, for an adult, the dose with respect to 1 kg of body weight should be in the range of 0.001-100 mg/day, or preferably in the range of 0.1-10 mg/day. It can be administered 2-4 times a day.

[0031]

#### Application examples

In the following, this invention will be explained in more detail with reference to application examples. However, this invention is not limited to these application examples. If not specified otherwise, the amounts refer to w1% with respect to the total amount of the hair cosmetic preparation in these application examples. Before describing the application examples, the test for studying the hair growth promoting effect adopted in the application examples will be explained first.

[0032]

#### 1. Test for evaluating hair growth promoting effect

In order to study the hair growth promoting effect of the hair cosmetic preparation of this invention, a tricogram [transliteration] test was carried out as follows. The subjects were men; in each group (comparative example and application example) 10 people were used. The period of coating of the sample was 4 months. During this period, the sample was coated twice day on the scalp, with a dose of 2-4 mL in each application. Right before the start of the coating test and after coating for 4 months, 50 hairs were pulled out randomly from the top of the head of each testee. The root of each hair was then observed by microscope, and, from the states of the hair roots, the hair root catagen rate (%) was calculated. The following grades were given according to the degree of increase/decrease of the catagen rate after the coating test of the sample as compared to before the test.

[0033]

<Evaluation standards>

Significant effect: Hair root catagen rate decreases by more than 30%

Certain effect: Hair root catagen rate decreases by more than 20%

Weak effect: Hair root catagen rate decreases by more than 10%

No effect: Hair root catagen rate decreases by less than 10%

As a rule for evaluating the hair growth promoting effect, it is designated as effective if more than 50% of the testees were found effective; otherwise, it is taken as invalid.

[0034]

## 2. Test for evaluating hair loss-inhibiting effect

The effect of preventing hair loss is evaluated from the change in the number of hairs falling off during hair washing after use of the sample as compared with before using the sample. 10 male testees were taken as a group for each of the comparative examples and application examples. The period of coating of the sample was 6 months. In the previous period of 2 months, the sample was not coated. In the later period of 4 months, the sample was coated. During the coating period, the sample was coated twice a day on the scalp, with doses of 2-4 mL in each application. During the test period, the fallen hairs in hair washing were collected each day, and the number of fallen hairs was counted for each week.

[0035]

The number of fallen hairs during each period was displayed as follows. During the first 2 months when the sample was coated, the number of fallen hairs calculated in 8 rounds were summarized to derive the number of fallen hairs in each round in the form of average value  $\pm$

standard deviation. Also, the same data processing was performed for total of 8 rounds of fallen hair number during the later 2 months in the 4-month period in which the sample was coated.

[0036]

The effect was evaluated from the difference in the average value between the aforementioned periods.

<Evaluation standard>

- ++: The fallen hair number decreases by more than 70: the effect is significant.
- +: The fallen hair number decreases by more than 40: the effect is clear.
- ±: The fallen hair number decreases by more than 10: there is a definite effect.
- : The fallen hair number decreases by less than 10: there is no effect.

As a rule for evaluating the hair loss-inhibiting effect, it is designated as effective if more than 50% of the testees gave +; otherwise, it is designated as invalid.

[0037]

### 3. Test for evaluating the effect preventing dandruff and itching

The effect of preventing dandruff and itching was evaluated by surveying the degree of dandruff and itching of the scalps of the testees after the end of the test period. 10 males who complained of dandruff and itching were taken as a group in each of the comparative examples and application examples. The period of coating of the sample was 3 months. During this period, hair was washed once a day using the same shampoo free of medical additives. The sample was coated twice a day on the scalp, with doses of 2-4 mL each round. After the end of the test, the degree of dandruff and itching of the scalp of each testee was evaluated according to the following grades.

[0038]

<Grades of dandruff>

- 3: There is serious dandruff.
- 2: There is significant dandruff.
- 1: There is certain dandruff.
- 0: There is little dandruff.

[0039]

<Grades of itching>

3: Serious itching

2: Definite itching

1: Slight itching

0: No itching

[0040]

Application Examples 1-7, Comparative Examples 1-7

In each case, a lotion was prepared according to the composition listed in Table 1 (Comparative Examples 1-7, Application Examples 1-7) using the manufacturing method explained later. Then, the aforementioned tests were carried out.

[0041]

Table 1

① 各配合成分の数字は、重量%

② 配合成分	③ 比較例							④ 実施例						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
クアチャララチ抽出液 ⑤	1.0	-	-	-	-	-	-	1.0	1.0	1.0	2.0	2.0	3.0	3.0
アラントイン ⑥	-	1.0	-	-	-	-	-	3.0	-	-	-	-	-	1.0
イクタモール ⑦	-	-	1.0	-	-	-	-	-	1.0	-	-	-	-	-
グアイアズレン ⑧	-	-	-	1.0	-	-	-	-	-	0.001	-	-	-	0.2
イブシロンアミノカプロン酸 ⑨	-	-	-	-	1.0	-	-	-	-	-	2.0	-	-	-
塩化リゾチウム ⑩	-	-	-	-	-	1.0	-	-	-	-	-	0.5	-	-
塩酸ジフェニヒドラミン ⑪	-	-	-	-	-	-	1.0	-	-	-	-	-	5.0	-
グリセリン ⑫	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
硬化ヒマシ油ニチレンオキシド(40モル)付加物 ⑬	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
リンゴ酸 ⑭	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量
香料及び色素 ⑮	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量	適量
95%エタノール ⑯	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
精製水 ⑰	残量	残量	残量	残量	残量	残量	残量	残量	残量	残量	残量	残量	残量	残量

Key: 1 The data of the various components are in wt%

2 Component

3 Comparative example

4 Application example

5 Cuachalalate extract

6	Allantoin
7	Ichthammol
8	Guaiazulene
9	Epsilon-aminocaproic acid
10	Lysozyme hydrochloride
11	Diphenhydramine hydrochloride
12	Glycerin
13	Cured castor oil ethylene oxide (40 mol%) adduct
14	Malic acid
15	Perfume and dye
16	95% ethanol
17	Purified water
18	Appropriate amount
19	Balance

[0042]

<Manufacturing method>

Various chemicals (cuachalalate extract, allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride), glycerin, cured castor oil ethylene oxide (40 mol%) adduct, malic acid and perfume were dissolved in 95% ethanol (ethanol phase). Then, the dye was added to and dissolved in the purified water. The aqueous solution of dye was added to the aforementioned ethanol phase, and the mixture was stirred, forming a clear liquid-like lotion.

[0043]

The results of the aforementioned tests are listed in Table 2 (test for evaluating hair growth promoting effect), Table 3 (test for evaluating hair loss-inhibiting effect), and Table 4 (test for evaluating the effect of preventing dandruff and itching).

[0044]

Table 2

群①	② 休止期毛根の減少率(%)				⑦ 養毛効果の評価
	③ 顕著な効果	④ 効果あり	⑤ 弱い効果	⑥ 効果なし	
⑧ 比較例 1	0	10	20	70	無効 無効 無効 無効 無効 無効 無効 ⑩
比較例 2	0	0	10	90	
比較例 3	0	0	10	90	
比較例 4	0	0	20	80	
比較例 5	0	0	10	90	
比較例 6	0	0	10	90	
比較例 7	0	0	20	80	
⑨ 実施例 1	30	50	20	0	有効 有効 有効 有効 有効 有効 有効 ⑪
実施例 2	20	50	20	10	
実施例 3	40	50	10	0	
実施例 4	40	40	20	0	
実施例 5	30	50	20	0	
実施例 6	50	40	10	0	
実施例 7	40	50	10	0	

- Key:
- 1 Group
  - 2 Decrease rate of catagen hair root (%)
  - 3 Significant effect
  - 4 Definite effect
  - 5 Weak effect
  - 6 No effect
  - 7 Evaluation of hair growth promoting effect
  - 8 Comparative example
  - 9 Application example
  - 10 Invalid
  - 11 Effective

[0045]

Table 3

① 群	② 抜毛本数の減少率(%)				③ 抜毛防止効果の評価
	++	+	±	-	
④ 比較例 1	10	20	10	60	無効 無効 無効 無効 無効 無効 無効 ⑥
比較例 2	0	10	10	80	
比較例 3	0	0	20	80	
比較例 4	0	10	20	70	
比較例 5	0	0	10	90	
比較例 6	0	0	20	80	
比較例 7	0	0	20	80	
⑤ 実施例 1	40	50	10	0	有効 有効 有効 有効 有効 有効 有効 ⑦
実施例 2	30	50	0	20	
実施例 3	40	40	20	0	
実施例 4	50	30	20	0	
実施例 5	30	50	20	0	
実施例 6	50	50	0	0	
実施例 7	60	40	0	0	



- Key: 1 Group  
 2 Decrease rate of fallen hair number (%)  
 3 Evaluation of hair loss-inhibiting effect  
 4 Comparative example  
 5 Application example  
 6 Invalid  
 7 Effective

[0046]

Table 4

群 ①	ふけ ② (平均スコア)	かゆみ ③ (平均スコア)
比較例 1	1.6	1.6
比較例 2	2.4	1.6
比較例 3	2.5	2.1
④ 比較例 4	1.9	1.4
比較例 5	2.1	1.7
比較例 6	1.8	1.7
比較例 7	2.0	1.5
実施例 1	0.5	0.6
実施例 2	0.4	0.7
⑤ 実施例 3	0.2	0.5
実施例 4	0.3	0.5
実施例 5	0.5	0.6
実施例 6	0.6	0.3
実施例 7	0.4	0.4

- Key: 1 Group  
 2 Dandruff (average grade)  
 3 Itching (average grade)  
 4 Comparative Example  
 5 Application Example

[0047]

It can be seen from the above results that for the lotions of the application examples prepared by combination of allantoin, ichthammol, guaiazulene,  $\epsilon$ -aminocaproic acid, lysozyme hydrochloride, and diphenhydramine hydrochloride as anti-inflammatory agents and cuachalalate extract, significant hair growth promoting effect, hair loss-inhibiting effect, and effect of preventing dandruff and itching are realized. On the other hand, for the lotions prepared in the comparative examples using the anti-inflammatory agent or the cuachalalate extract alone, even when the amount is similar to that in the application examples, the results are much poorer.

[0048]

That is, when the aforementioned anti-inflammatory agents and cuachalalate extract are combined to form the hair cosmetic preparation of this invention, synergic effects, that is, hair growth promoting effect, hair loss-inhibiting effect, and effect of preventing dandruff and itching, are realized. In this case, even a small amount of the effective components can realize the desired effect of the hair cosmetic preparation in this invention. Consequently, it is possible to prevent the unpleasant irritated feeling and reddening of the coated portion and its periphery that would be caused by a large amount of the anti-inflammatory agent.

[0049]

The following are some examples of the formulation of the hair cosmetic preparation of this invention.

Application Example 8. Lotion

(Component):	(Amount added) (wt%)
95% ethanol:	50.0
Cuachalalate extract:	0.5
Allantoin:	2.0
Diphenhydramine hydrochloride:	0.5
Sodium pyrrolidone carboxylate:	3.0
Cured castor oil ethylene oxide (40 mol) adduct:	0.5
Succinic acid:	Appropriate amount
Perfume and dye:	Appropriate amount
Purified water:	Balance

[0050]

<Manufacturing method>

Cuachalalate extract, allantoin, diphenhydramine hydrochloride, cured castor oil ethylene oxide (40 mol) adduct and perfume were dissolved in 95% ethanol (ethanol phase). Then, sodium pyrrolidone carboxylate, succinic acid, and dye were added and dissolved in the purified water. The aqueous solution was added to the aforementioned ethanol phase, and the mixture was stirred, forming a clear liquid-like lotion.

[0051]

The results of the aforementioned tests for the hair cosmetic preparation of this invention indicated that it has significant hair growth promoting effect, hair loss-inhibiting effect, and an effect of preventing dandruff and itching.

[0052]

Application Example 9. Lotion

(Component):	(Amount added) (wt%)
95% ethanol:	90.0
Cuachalalate extract:	3.0
$\epsilon$ -aminocaproic acid:	1.0
1,3-butylene glycol:	0.5
Cured castor oil ethylene oxide (50 mol) adduct:	0.5
Sodium laurylsulfate:	0.5
Lactic acid:	Appropriate amount
Sodium lactate:	Appropriate amount
Perfume and dye:	Appropriate amount
Purified water:	Balance

[0053]

<Manufacturing method>

Cured castor oil ethylene oxide (50 mol) adduct and perfume were dissolved in 95% ethanol. Then, after adding the purified water, Cuachalalate extract,  $\epsilon$ -aminocaproic acid, 1,3-butylene glycol, sodium laurylsulfate, lactic acid, sodium lactate, and dye were added to the mixture and dissolved with stirring, forming a clear liquid-like lotion.

[0054]

The results of the aforementioned tests for the hair cosmetic preparation of this invention indicated that it has significant hair growth promoting effect, hair loss-inhibiting effect, and an effect of preventing dandruff and itching.

[0055]

Application Example 10. Milky lotion-like hair cosmetic preparation

(Component):	(Amount added) (wt%)
(Phase A)	
Cured castor oil ethylene oxide (60 mol) adduct:	2.0
Glycerin:	5.0
Dipropylene glycol:	10.0
1,3-butylene glycol:	5.0
Polyethylene glycol:	5.0
(Phase B)	
Cetyl isoctanate:	10.0
Squalane:	10.0
Vaseline:	2.0
Propyl paraben:	2.0
Cuachalalate extract:	2.0
Guaiazulene:	0.5
(Phase C)	
1% aqueous solution of carboxyvinyl polymer:	30.0
Sodium hexametaphosphate:	0.03
Purified water:	9.35
(Phase D)	
Purified water:	4.0
(Phase E)	
Potassium hydroxide:	0.12
Purified water:	3.0

[0056]

## &lt;Manufacturing method&gt;

Phase A and phase B were heated and dissolved at 60°C, respectively, and they were mixed. The mixture was processed by a homomixer to form a gel. The gel was added slowly into phase D, and the mixture was dispersed by the homomixer. Then, dissolved phase E was added to this, and the mixture was dispersed by a homomixer. Next, phase E was added to this dispersion product and emulsified in homomixer to form an O/W lotion-type hair cosmetic preparation.

[0057]

The hair cosmetic preparation of this invention was used to perform the aforementioned tests, and significant hair growth promoting effect, hair loss-inhibiting effect and effect of preventing dandruff and itching were observed.

[0058]

Effect of the invention

This invention provides a type of hair cosmetic preparation with excellent hair growth promoting effect, hair loss-inhibiting effect, anti-itching and antidandruff effect, as well as high safety.

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